

WE CLAIM:

1. Apparatus for direct trunking between a time division multiplexed (TDM) switch and an asynchronous transfer mode (ATM) backbone network, comprising:

an interface adapted for connection to an ATM link for transferring ATM cells to, and receiving ATM cells from, the ATM backbone network, and adapted for connection to at least one serial link for transferring pulse code modulated (PCM) data to, and receiving PCM data from, a fabric of the TDM switch, the interface converting the PCM data to ATM cells and vice versa; and

the interface being further adapted to emulate a trunk peripheral of the TDM switch so that a computing module of the TDM switch is enabled to communicate with the interface using a protocol native to the computing module for communications with a trunk peripheral.

2. The apparatus as claimed in claim 1 wherein the trunk peripheral emulated by the interface is a digital trunk controller.

3. The apparatus as claimed in claim 1 wherein the serial link is connected to a switch fabric interface that receives PCM data from, and transfers PCM data to, a switch fabric of the TDM switch.

4. The apparatus as claimed in claim 3 wherein the switch fabric interface converts data received from the fabric in electrical form to data in optical form for transfer over the serial link to the interface.

5. The apparatus as claimed in claim 1 wherein the interface is adapted to formulate and transfer messages through the ATM backbone network to peer interfaces connected to the ATM network in order to set up connections for TDM calls.

6. The apparatus as claimed in claim 5 wherein the interface is further adapted to formulate and transfer ATM signaling messages in order to initiate the set up and release of ATM virtual channel connections in the ATM backbone network.

7. The apparatus as claimed in claim 5 wherein the TDM switch is configured to view the interface as a trunk peripheral that supports a single large trunk group.

8. A method of providing direct trunking between a time division multiplexed (TDM) switch and an asynchronous transfer mode (ATM) backbone network, comprising the steps of:

configuring an interface adapted to convert pulse code modulated (PCM) data to ATM cells, and vice versa, so that the interface is adapted to communicate with a computing module of the switch using a messaging protocol native to the switch and the interface thereby emulates a trunk peripheral of the TDM switch; and

connecting the interface directly to a serial link of a fabric interface of the TDM switch to enable direct trunking between the TDM switch and the ATM backbone network.

9. The method as claimed in claim 8 wherein the interface is further configured to formulate and send messages through the ATM backbone network to peer interfaces in order to set up and release calls between the TDM switch and other TDM switches connected to the ATM backbone network.

10. The method as claimed in claim 9 wherein the interface is further configured to formulate and send ATM signaling messages to initiate the setup or release of ATM virtual channel connections for the transfer of bearer traffic associated with the calls.

11. The method as claimed in claim 8 wherein the TDM switch is configured to view the interface as a trunk peripheral that supports a single large trunk group.

12. The method as claimed in claim 8 wherein the TDM switch is configured to view a plurality of interfaces as a collection of trunk peripherals that support a single large trunk group.

13. Apparatus for direct trunking between a time division multiplexed (TDM) switch and an asynchronous transfer mode (ATM) backbone network, comprising:

an interface adapted for connection to an ATM link for transferring ATM cells to, and receiving ATM cells from, the ATM backbone network, and adapted for connection to at least one serial link for transferring pulse code modulated (PCM) data to, and receiving PCM

data from, a fabric of the TDM switch, the interface converting the PCM data to ATM cells and vice versa;

the interface being further adapted to emulate a trunk peripheral of the TDM switch and to communicate with peer interfaces connected to the ATM backbone to control virtual channel connections for TDM calls.

14. The apparatus as claimed in claim 13 wherein the interface is adapted to communicate with a computing module of the TDM switch using a protocol native to the computing module.

15. A method of providing direct trunking between a time division multiplexed (TDM) switch and an asynchronous transfer mode (ATM) backbone network, comprising the steps of:

configuring an interface adapted to convert pulse code modulated (PCM) data to ATM cells, and vice versa, so that the interface is adapted to emulate a trunk peripheral of the TDM switch and to communicate with other interfaces connected to the ATM backbone network to control virtual channel connections for TDM calls; and

connecting the interface directly to a serial link of a fabric interface of the TDM switch to enable direct trunking between the TDM switch and the ATM backbone network.

16. The method as claimed in claim 15 wherein the interface controls the virtual channel connections for TDM calls by sending messages through the ATM backbone

network to other interfaces in order to set up and release calls between the TDM switch and other TDM switches connected by other interfaces to the ATM backbone network.

17. The method as claimed in claim 16 wherein the interface is further configured to formulate and send ATM signaling messages to an ATM switch to which the interface is connected to initiate the set up or release of ATM virtual channel connections for the transfer of bearer traffic associated with the TDM calls.

18. The method as claimed in claim 15 wherein the TDM switch is configured to view the interface as a digital trunk controller that supports a single large trunk group.